

REMARKS

General

The present is in response to the Office Action dated January 29, 2007, where the Examiner has rejected Claims 1, 3, 5-12 and 15-20. Accordingly, Claims 1, 3, 5-12 and 15-20 are pending in the present application. Reconsideration and allowance of pending Claims 1, 3, 5-12 and 15-20 in view of the following amendments and remarks are respectfully requested.

Status of the Claims

Claims 1, 3, 5-12 and 15-20 are rejected by the Examiner.

By this amendment:

No Claims have been amended.

Response to rejection of Claims 15-20 under 35 U.S.C. §102(b)

The Examiner has rejected Claims 15-20 under 35 U.S.C. §102(b) as being anticipated by **SUN et al.** (USPN 5,239,181) (referred to hereinafter as "**S1**"). For the reasons discussed below, Applicants respectfully submit that the present invention as defined by independent Claims 15 and 20 and associated dependent claims is patentably distinguishable over **S1**.

The Examiner has rejected Claim 15 under 35 U.S.C. §102(b) as being anticipated by **S1** because "Sun et al [**S1**] disclose (sic) the steps of (a) receiving an analog input signal,..." For the reasons discussed below, Applicants respectfully submit that the present invention as defined by independent Claim 15 and associated dependent claims is patentably distinguishable over **S1**.

Pending independent Claim 15 is directed to a method for optically clocked tracking and holding including the steps of (a) receiving an analog input signal and an optical input clocking

signal, (b) determining whether an optical pulse is received by at least two photodetectors from said optical input clocking signal, (c) maintaining a diode bridge in forward bias and returning to STEP (a) if said optical pulse is not received from said optical input clocking signal, (d) switching said diode bridge to reverse bias for a desired time and returning to STEP (a) if said optical pulse is received from said optical input clocking signal. Thus, the present invention as defined in Claim 15 operates by tracking an input current when the diode bridge is forward biased and holding the input current value when an optical pulse is applied to the photodetectors, which causes the diode bridge to become reverse biased.

In stark contrast, **S1** fails to disclose, teach or suggest the above-recited limitations specified by Claim 15. As described above, **S1** operates normally in hold mode when the photodetectors are not illuminated and operates in track mode when the photodetectors are illuminated. I.e., the hold and track apparatus of **S1** operates by holding an input current when the diode bridge is reverse biased and tracking the input current value when an optical pulse is applied to the photodetectors, which causes the diode bridge to become forward biased.

S1 cannot result in the present invention as recited in independent Claim 15 because **S1** fails to disclose or remotely suggest a method including the steps of (c) maintaining a diode bridge in forward bias and returning to STEP (a) if said optical pulse is not received from said optical input clocking signal, (d) switching said diode bridge to reverse bias for a desired time and returning to STEP (a) if said optical pulse is received from said optical input clocking signal because **S1** operates as a hold and track circuit.

Applicants believe Claim 15 further particularly points out and distinctly claims these limitations absent from cited references of record. As discussed above, independent Claim 15 is

patentably distinguishable over **S1** and, as such, Claims 16-19 depending from independent Claim 15 are, *a fortiori*, also patentably distinguishable over **S1**.

The Examiner has rejected Claim 20 under 35 U.S.C. §102(b) as being anticipated by **S1**. For the reasons discussed below, Applicants respectfully submit that the present invention as defined by independent Claim 20 is patentably distinguishable over **S1**.

Pending independent Claim 20 is directed to an apparatus including means for maintaining a diode bridge in forward bias if said optical pulse is not received from said optical input clocking signal and means for switching said diode bridge to reverse bias for a desired time if said optical pulse is received from said optical input clocking signal. Thus, the present invention as defined in Claim 20 operates by tracking an input current when the diode bridge is forward biased and holding the input current value when an optical pulse is applied to the photodetectors, which causes the diode bridge to become reverse biased.

In stark contrast, **S1** fails to disclose, teach or suggest the above-recited limitations specified by Claim 20. As described above, **S1** operates normally in hold mode when the photodetectors are not illuminated and operates in track mode when the photodetectors are illuminated. I.e., the hold and track apparatus of **S1** operates by holding an input current when the diode bridge is reverse biased and tracking the input current value when an optical pulse is applied to the photodetectors, which causes the diode bridge to become forward biased.

S1 cannot result in the present invention as recited in independent Claim 20 because **S1** fails to disclose or remotely suggest an apparatus including means for maintaining a diode bridge in forward bias if said optical pulse is not received from said optical input clocking signal and means for switching said diode bridge to reverse bias for a desired time if said optical pulse is received from said optical input clocking signal because **S1** operates as a hold and track circuit.

Accordingly, Applicants respectfully submit that the rejection of Claims 15-20 has been traversed, and that independent Claims 15 and 20 and corresponding dependent claims should now be allowed.

Response to rejection of Claims under 35 U.S.C. §103(a)

The Examiner has rejected Claims 1, 3, 5, 7-10 and 12 under 35 U.S.C. §103(a) as being unpatentable over **S1** in view of **Metz** (USPN 4,659,945) (referred to hereinafter as "**S2**"). For the reasons discussed below, Applicants respectfully submit that the present invention, as defined by independent Claim 1, is patentably distinguishable over **S1** in view of **S2**. Pending independent Claim 1 is directed to an optically clocked optoelectronic track and hold apparatus including a diode bridge, which includes a first diode having a cathode operatively coupled to a first node and an anode operatively coupled to a second node; a second diode having a cathode operatively coupled to a third node and an anode operatively coupled to the first node; a third diode having a cathode operatively coupled to a fourth node and an anode operatively coupled to the second node; a fourth diode having a cathode operatively coupled to the third node and an anode operatively coupled to the fourth node; a first photodetector having a cathode operatively coupled to the second node and an anode operatively coupled to a negative potential node; and a second photodetector having an anode operatively coupled to the third node and a cathode operatively coupled to a positive potential node; a first current source operatively coupled to the second node of the diode bridge and a second current source operatively coupled to the third node of the diode bridge. In stark contrast, **S1** and **S2** do not, singly or in combination teach, disclose, or suggest an apparatus that includes the above-recited limitations specified by Claim 1. MPEP §2143.03 states that if any independent claim is non-obvious under 35 U.S.C §103, then

any claim depending therefrom is nonobvious. Therefore, dependent claims, which depend from independent Claim 1 are patentable over the cited references for the above-stated reasons.

Accordingly, Applicants respectfully submit that rejection of Claims 1, 3, 5, 7-10 and 12 has been traversed, and that Claims 1, 3, 5, 7-10 and 12 should now be allowed.

The Examiner has rejected Claim 6 under 35 U.S.C. §103(a) as being unpatentable over **S1** in view of **S2** and in further view of **MacDonald** (USPN 4,727,349) (referred to hereinafter as "**S3**"). For the reasons discussed below, Applicants respectfully submit that the present invention, as defined by Claim 6 depending from independent Claim 1, is patentably distinguishable over **S1** in view of **S2** and in further view of **S3**. Pending amended independent Claim 1 is directed to an optically clocked optoelectronic track and hold apparatus including a diode bridge, which includes a first diode having a cathode operatively coupled to a first node and an anode operatively coupled to a second node; a second diode having a cathode operatively coupled to a third node and an anode operatively coupled to the first node; a third diode having a cathode operatively coupled to a fourth node and an anode operatively coupled to the second node; a fourth diode having a cathode operatively coupled to the third node and an anode operatively coupled to the fourth node; a first photodetector having a cathode operatively coupled to the second node and an anode operatively coupled to a negative potential node; and a second photodetector having an anode operatively coupled to the third node and a cathode operatively coupled to a positive potential node; a first current source operatively coupled to the second node of the diode bridge and a second current source operatively coupled to the third node of the diode bridge. In stark contrast, **S1**, **S2** and **S3** do not, singly or in combination teach, disclose, or suggest an apparatus that includes the above-recited limitations specified by Claim 1. MPEP §2143.03 states that if any independent claim is non-obvious under 35 U.S.C §103, then

any claim depending therefrom is nonobvious. Therefore, dependent claims, which depend from independent Claim 1 are patentable over the cited references for the above-stated reasons.

Accordingly, Applicants respectfully submit that rejection of Claim 6 has been traversed, and that Claim 6 should now be allowed.

The Examiner has rejected Claim 11 under 35 U.S.C. §103(a) as being unpatentable over **S1** in view of **S2** and in further view of **Taddiken** (USPN 5,455,584) (referred to hereinafter as "**S4**"). For the reasons discussed below, Applicants respectfully submit that the present invention, as defined by Claim 11 depending from independent Claim 1, is patentably distinguishable over **S1** in view of **S2** and in further view of **S4**. Pending amended independent Claim 1 is directed to an optically clocked optoelectronic track and hold apparatus including a diode bridge, which includes a first diode having a cathode operatively coupled to a first node and an anode operatively coupled to a second node; a second diode having a cathode operatively coupled to a third node and an anode operatively coupled to the first node; a third diode having a cathode operatively coupled to a fourth node and an anode operatively coupled to the second node; a fourth diode having a cathode operatively coupled to the third node and an anode operatively coupled to the fourth node; a first photodetector having a cathode operatively coupled to the second node and an anode operatively coupled to a negative potential node; and a second photodetector having an anode operatively coupled to the third node and a cathode operatively coupled to a positive potential node; a first current source operatively coupled to the second node of the diode bridge and a second current source operatively coupled to the third node of the diode bridge. In stark contrast, **S1**, **S2** and **S4** do not, singly or in combination teach, disclose, or suggest an apparatus that includes the above-recited limitations specified by Claim 1. MPEP §2143.03 states that if any independent claim is non-obvious under 35 U.S.C §103, then

any claim depending therefrom is nonobvious. Therefore, dependent claims, which depend from independent Claim 1 are patentable over the cited references for the above-stated reasons.

Accordingly, Applicants respectfully submit that rejection of Claim 11 has been traversed, and that Claim 11 should now be allowed.

Conclusion

Applicants respectfully request withdrawal of the rejection of Claims 1, 3, 5-12 and 15-20. Accordingly, Applicants respectfully submit that Claims 1, 3, 5-12 and 15-20 are now in condition for allowance.

A fee of \$120.00 for a one-month extension of time to file a response to Office Action is included in this response.

Respectfully submitted,

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